

standing of the peculiarities, habits, and capacities of animals, whether of the higher type or of crawling insects—the study of those laws of motion, and physical forces, by which Infinite wisdom governs the boundless universe—all these branches of knowledge are now pursued with a vigor and tenacity, unknown to the votary of ancient learning, and to answer the purposes of practical utility. They are made to serve the purposes, and direct the course of the miner in his search for mineral treasures in the bowels of the earth; and in ransacking the coal-fields which nature has laid aside in her great store-house for the use of man, after the forests have fallen before a redundant population. They afford data, by which the physician is enabled to minister to human suffering; by which the manufacturer imparts the tints of beauty to his fabrics; by which the cutler tempers the edge of the implement of labor. They direct the engineer as he drives his car careering over the land—or propels his ship against wind and current.

It is to agriculture especially, that all these great departments of knowledge are coming to serve as handmaids.—And it is a little remarkable, that agriculture, the oldest of human pursuits, the basis and support of every other branch of industry, should be indebted for its late wonderful advancement to the developments of other sciences; whilst their practical application requires materials furnished by agriculture alone. Mineralogy and geology teach the agriculturist the crude elements of which his soil is composed, and consequently, its peculiar adaptation to what may be most remunerative to his labor. Chemistry teaches him the component qualities of various branches of the vegetable kingdom, and the peculiar properties of various manures; that he may conform his crop to the natural capacity of the soil; or by artificial means, apply those sources of fertility, in which the soil is deficient. Botany teaches him the constitution and character of the cereal grains, as well as of trees and flowers; and thus enables him to aid their growth, and